#3100

TECHNICAL MEMORANDUM
Utah Coal Regulatory Program

March 26, 2009

TO: Internal File

THRU: Priscilla Burton, Team Lead, Environmental Scientist III / Soils Science
Daron Haddock, Coal Program Manager, Task Manager

FROM: Peter Hess, Environmental Scientist III, Engineering / Bonding

RE: Permit Application Package, Alton Coal Development, LLC, Coal Hollow Mine, PRO/025/005, Task ID # 3100

SUMMARY:

Task ID# 3100 was received as a response to the Division deficiencies aired in Task ID # 2910. The Permittee's response was received on December 22, 2008. This memo will address the adequacy of the TID # 3100 response as they relate to the R645-500 and 800 Utah Coal Mining Rules.

Project Initiation: February 3, 2009

Project Completion: March 9, 2009

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Analysis:

Task 2910 deficiency: R645-301-521.190, *"The Applicant must state in the PAP the legal description of the permit area and include the number of federal, state and fee acres. The Division suggests the information be in table format and be located in Chapter 1 of the PAP. Even if there are no federal or State acreages the table is requested. [WW]"*

In Section 112.500, the applicant provides a table that lists the permit area by the number of federal, state and fee acres. This permit area is shown on Dwg. 1-3 and 1-4. Mining is on fee land only. Section 116.100 provides a listing of the number of permit acres to be disturbed by mining in each phase (year) of the mining.

The Task ID# 2910 deficiency R645-301-521, *"The Applicant must change the term project area to permit boundary on each map in the submittal."*

The Permit applicant re-submitted the following maps to utilize the following R645 Coal Mining Rules terminology, "permit boundary" and "permit area";

a) Drawings 1-1 through 1-4
b) Drawing 2-2
c) Drawing 3-1 through 3-6
d) Drawing 5-1, 5-2, 5-3, 5-9, 5-10, 5-13, 5-14, 5-15, 5-16, 5-16, 5-17, 5-18, 5-19, 5-20, 5-21, 5-22, 5-23, 5-25, 5-26, 5-27, 5-33, 5-34, 5-35, 5-36, 5-37, 5-38, 5-39
e) Drawings 6-1, 6-2, 6-5, 6-9
f) Plates 3 and 4 of the AVF Report
g) Drawings 7-1, 7-2, 7-3, 7-10, 7-12.

Kane County Road #136 will remain under the jurisdiction of Kane County and same will be maintained by the County as a public road (See Appendix 1-7). The Kane County Road K3900 (136) Closure, Relocation and Replacement Agreement, Miscellaneous Provision C are contained on Page 7.

Findings:

The information provided in the proposed amendment is adequate to meet the requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Affected Area Boundary Maps

In response to Task 2910 deficiency: R645-301-521, the Applicant re-created the following maps to utilize the following R645 Coal Mining Rules terminology, "permit boundary" and "permit area":

Drawings 1-1 through 1-4
Drawing 2-2
Drawing 3-1 through 3-6
Drawing 5-1, 5-2, 5-3, 5-9, 5-10, 5-13, 5-14, 5-15, 5-16, 5-16, 5-17, 5-18, 5-19, 5-20, 5-21, 5-22, 5-23, 5-25, 5-26, 5-27, 5-33, 5-34, 5-35, 5-36, 5-37, 5-38, 5-39
Drawings 6-1, 6-2, 6-5, 6-9
Plates 3 and 4 of the AVF Report
Drawings 7-1, 7-2, 7-3, 7-10, 7-12.

The Applicant has also identified land leased from C. Burton Pugh, which lies outside of the Coal Hollow permit boundary. The leased acreage is identified on Drawing 1-3; the Applicant's interest is declared on Page 1-6, Chapter 1, Volume 1. Some private ownership remains on the southeast side of the proposed permit area (See Dwg. 1-4, Coal Ownership).

The Applicant states that there are no other areas outside of the proposed permit boundary which are under the exclusive control Alton Coal Development.

Kane County Road #136 will remain under the jurisdiction of Kane County and same will be maintained by the County as a public road (See Appendix 1-7). The Kane County Road K3900 (136) Closure, Relocation and Replacement Agreement, Miscellaneous Provision C are contained on Page 7.

Previous task 2910 deficiency: R645-301-521.130 through R645-301-521.132 and R645-301-521.141, *"The Applicant must address plans to build a public road that will bypass the town of Alton to facilitate mining. The Division has received comments from Alton residents that the town officials have been in negotiations with the Applicant to build a bypass road. The purpose of the bypass road is to route coal truck traffic around Alton. Road construction solely for the purpose of facilitating coal mining is considered "affected area" as defined by R645-100-200 and must be shown on mine maps."*

Alton Coal Development, LLC. has responded that they have no plans for a by-pass, mine haul road. Drawing 1-1 Project Area shows that the north permit boundary for the Coal Hollow Mine is at least two miles from the Town of Alton. The construction of a publicly used,

by-pass road around Alton would be under the jurisdiction of the Kane County Commissioners and the Kane County Road Department.

Existing Structures and Facilities Maps

Drawings 1-5 and 1-6 show the location of all buildings in and within 1000 feet of the proposed permit area.
Drawing 1-5 shows the Swapp Ranch (now occupied by the Dames family), which is a frame construction on a layered rock foundation. This dwelling is just over 300 feet from the east permit boundary. Drawing 1-5 is P.E. certified by Mr. Chris McCourt, a Utah registered professional engineer.

Drawing 1-6 shows the various buildings associated with the Sorensen Ranch. Drawing 1-6 is also P.E. certified by Mr. McCourt. The ranch house, which is a wood frame construction on a layered rock foundation, is 950 feet from the closest permit boundary. All other buildings are wood frame construction with no concrete foundations.

Since these two dwellings are within 1,000 feet of the permit boundary, the permit Applicant must submit an anticipated blast design for overburden and coal removal. Chapter 5, p. 5-22 states that Appendix 5-4 contains a blasting plan (anticipated) for the Coal Hollow Mine. Appendix 5-4 is reviewed under Operation Plan/Use of Explosives section of this Technical Analysis.

Existing Surface Configuration Maps

The Applicant has provided maps which show 5 foot contour intervals, including Drawings 5-1, 5-20, 5-20A, 5-21, 5-21A, 5-22, 5-35, 5-36, 5-37, 5-37A. Mine Workings Maps

There are no other currently active coal mining operations in this area. Page 5-8, Chapter 5, Section 521.110, Previously Mined Areas states that the following underground mining operations previously existed within the Alton Amphitheatre; Seaman Mine, Smirl Mine, Alton Mine, Johnson Mine, and Silver Mine. The PAP states that these mining operations did not exist within the currently proposed permit area or the adjacent area as defined in R645-100-200. The Permittee has not provided any maps of underground workings for these operations.

Permit Area Boundary Maps

Previous task 2910 deficiency: R645-301-521.132, *"The Applicant must update all permit area boundaries to show that the access road from the closed section of County Road 136 to the mine site will be within the permit area."*

The Permittee responded to the above deficiency in this manner: *"The section of road from the permit boundary, north to the road relocation point will remain under the jurisdiction of Kane County and will be maintained by the County as a public road. For details related to this road status, refer to Appendix 1-7; the Kane County Road K3900 (136) Closure, Relocation and Replacement Agreement, Miscellaneous Provision C, Page 7. Since this section of road will continue to be a public road under the jurisdiction of Kane County it is not included as part of the permit area in this application. All drawings showing the closure point of this road and access to the facilities area are modified to be consistent with this agreement."*

The Division is responsible for approving or disapproving coal mining permits in the State of Utah (R645-300-112.100). Drawing 1-4 Coal Ownership indicates that Kane County road #136 traverses private coal and Federal / BLM coal. The Division is responsible for the backfilling, grading and compaction of spoil within the County road #136 right-of-way as well as areas on either side of the 66 foot wide County Road R. O. W.

Surface and Subsurface Manmade Features Maps

Only two man-made surface and sub-surface features have been identified within the proposed Alton permit area (Page 5-8, Chapter 5, Section 521.122).

The Kane County road #136 (feature #1) is identified on Drawing 5-3.

Page 5-9, Chapter 5, Section 521.124 of the Task ID # 3100 application states that there is one impoundment located within the permit area (Pond 20-1). Pond 20-1 is shown on Drawing 7-7. The surface area of this impoundment is 3,400 square feet.

There are no other areas of existing spoil, waste, coal development waste, and noncoal waste disposal, dams, embankments, other impoundments and water treatment, and air pollution control facilities within the permit area.

Drawing 7-7 is P.E. certified by a Utah registered professional engineer.

Findings:

The information provided meets the requirements of the Utah Coal Rules.

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

The Division received a comment that the Operation Plan is not specific to local hydrologic conditions nor does it address potentially adverse hydrologic consequences because the PHC is not complete. As discussed in this and other Tech Reviews, there are deficiencies in the baseline data and in the PHC that need to be addressed, but these deficiencies are not fatal flaws that have precluded the Applicant from formulating an Operation Plan. The Operation Plan submitted by the Applicant is based on valid baseline data and a reasonable draft PHC determination. All three elements are subject to revision as the deficiencies are addressed by the Applicant

The Applicant did not meet the general requirements of this section. Those general requirements include:

- In Section 523 the Applicant described the type of coal mining procedures, anticipated annual and total production of coal, by tonnage, and some major equipment they will use for all aspects of those operations.
- In Section 536, Section 528 and Section 553 the Applicant described the construction, operation and reclamation of the mine facilities. The Division will analyze specific facilities in other sections of the Technical Analysis (TA).

The Applicant has described a 2MT, 24 hr/day 6 day/week operation in Introduction to the PAP. In consulations with the Governor's Office in 2005 and with the DEQ and DOGM in 2007, the Applicant described a 2 MT, 2 shift/day, 6 day/week operation. As explained to the Governor's Office in 2005, the initial decision for a 2 shift work day was made to avoid night sky issues that were raised in the Cecil Andrus 1980 Suitability decision (Ex. 3, App. 1-3). The night sky issue has been raised by commenters during the recent public comment period and by the USFS and Bryce Canyon National Park in comments provided to the Division. The

application must explain the equipment required for lighting the 24 hour operation and the effect on the night sky as seen from Bryce Canyon National Park and the Dixie National Forest.

- Section 526.220 has been revised to include a list of anticipated lighting equipment that would likely be used to illuminate the night mining operations. The Division will analyze the list of specific equipment under the Support Facilities and Utility Installations section of this TA.
- However the Applicant has not discussed the effect on the night sky as seen from Bryce Canyon N. P. and the Dixie N. F. Therefore, this deficiency remains and must be addressed prior to receiving a recommendation for approval.

Findings:

The information provided in the application is not considered adequate to meet the requirements of this section. Before approval, the Applicant must provide the following in accordance with:

R645-301-526.220, Restated from Task 2910, The application must describe the effect of lighting the 24 hour operation on the night sky as seen from Bryce Canyon National Park and the Dixie National Forest. [PH, PB]

EXISTING STRUCTURES:

Regulatory Reference: 30 CFR 784.12; R645-301-526.

Analysis:

There are no existing structures within the proposed permit area.

Findings:

The permit application package has adequately addressed this requirement.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

Analysis:

The Applicant did not meet the requirement of this section.

Task 2910 deficiency: **R645-301-526.116,** *"The application must state whether Alton Coal Resources, LLC. Or Kane County will take charge of the County Road #136 re-alignment and subsequent reclamation. Details of the public road 136 re-alignment must be included as an appendix to the application and include the use of cattle guards and fencing in the design (requested during informal conference comment period)and describe measures for protection of the public during construction. The reclamation plan narratives and maps must be revised to describe construction of the road in its approximate original alignment."*

Section 526.116 has been revised to clarify that Kane County will take charge of the County Road 136 (K3900) re-alignment onto adjacent federal land during mining and restoration of K3900 to its approximate original alignment upon final reclamation of the proposed mine. Appendix 1-7 provides the details of that agreement.

One public comment received during the June 2008 Informal Conference concerning the livestock protection (fencing, cattle guards) along the road has been incorporated into the details of the County Road Agreement. That portion of K3900 extending from the relocation point to the mine permit boundary will be maintained by the County and continue to provide access for landowners, as required by R645-301-521.133.

Kane County will be solely responsible for the construction of the temporarily, re-aligned segment of County road #136 (K3900) during the coal recovery operation.

Alton Coal Development, LLC. is responsible for coal recovery, backfilling, compaction and reclamation activities in the right-of-way and adjacent areas of Kane K3900, to create a stable fill for final re-construction of K3900 in its approximate original alignment. These backfilling and compaction activities fall under the jurisdiction of the Division. At this time, the Division is not certain if backfilling and compacting of the weathered tropic shale can meet sub-grade specifications such that K3900 can be re-constructed in its approximate original location. Consequently, the Division has asked that additional information be provided under Reclamation Plan/Road Systems section of this TA.

As required by R645-103-234 for relocation and closure of a public roads, the Division has placed a notice in the Southern Utah News to run on March 25, 2009 notifying the public of the proposed temporary road relocation for K3900. Appendix 1-7 indicates that the County will also provide for a public hearing on the K3900 road relocation.

County Road K3993 (which parallels Lower Robinson Creek on private land held by Pugh) will be closed for the life of mine. This road closure was included in the March 25, 2009 public notice as well.

Findings:

The information provided in the application is considered adequate to meet the requirements of this section. To ensure a stable fill for the re-construction of K3900 in its approximate original alignment, the Division has asked that additional information be provided under Reclamation Plan/Road Systems section of this TA.

COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

Analysis:

The minimum regulatory requirements of this section are as follows;

"Underground mining activities shall be conducted so as to maximize the utilization and conservation of the coal, while utilizing the best technology currently available to maintain environmental integrity, so that reaffecting the land in the future through surface coal mining operations is minimized".

Drawing 5-9, Coal Extraction Overview, indicates that the Applicant intends to leave approximately 1,207,000 tons of coal beneath the highwall.

Section 523, Mining Methods of the permit application package does not discuss coal recovery beneath the highwall by any method.

The Division is puzzled as to why Alton Coal Development would not want to recover at least some of this additional tonnage along the highwall by augering or some other mining method.

A review of Drawing 5-9 indicates a distance of approximately 100 feet or more between the surface mining coal extraction area and the proposed permit boundary for Coal Hollow.

Drawing 1-4 Coal Ownership indicates that the proposed permit area for the Coal Hollow project is surrounded by Federally owned coal on all sides, with additional Fee coal on the east side.

Findings:

The plan is deficient. In accordance with the requirements of;

R645-301-522, The Applicant must justify why they do not intend to recover coal reserves between the highwall and the edge of the proposed permit boundary in order to maximize coal recovery and effectively utilize the resource. [PH]

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Renewable Resources Survey

Subsidence Control Plan

Performance Standards For Subsidence Control

Notification

The requirements of this section are relative to an underground coal mine performing secondary extraction and they are not relative to this surface coal mining proposal.

Findings:

The requirements of this section are not relative to a surface coal mining proposal.

SLIDES AND OTHER DAMAGE

Regulatory Reference: 30 CFR Sec. 817.99; R645-301-515.

Analysis:

The PAP addresses these requirements under section 515.100, and 515.200, Chapter 5, pages 5-6 and 5-7 of the PAP.

Findings:

The requirements of this section have been adequately addressed.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Road Classification System

Task 2910 deficiency: **R645-301-527.100;** *"The Applicant must state specifically which roads will be classified as primary roads and which roads will be classified as ancillary. The Division will not accept a blanket statement that all future roads will be ancillary. In addition, some roads that are not used to haul coal or spoil might be primary roads. In addition, the Applicant must also classify the road that connects the site with Kane County Road # 136."*

The Permittee has classified two roads for the coal extraction process; "Year 1 and 2 Mine Haul Road", and "Year 2 and 3 Mine Haul Road". This road classification is discussed in section 527.100, Chapter 5, page 5-33. These roads will provide access into and from the mining pits during the coal extraction process. Drawings 5-22 and 5-23 show details of the two haul roads.

The "Facilities Roadway," is the access to the mine facilities area and is described as a primary road. Details of this road are depicted on Drawing 5-22A and 5-22B.

Section 527.100 classifies seven individual roads as primary. Drawings 5-22A through 5-22G have been added to show details for primary roads. Drawings 5-35 and 5-37 have been revised to show the post-mining roads along with the post-mining topography.

The Sink Valley Road, K3900, is a Class "B" road under RS2477 designation.

Plans and Drawings

Appendix 1-7 includes information about the relocation of County Road 136.

The task 2910 review generated the following deficiency; "*The Applicant was not consistent with the description of the road surface,*" because Dwg 23, Primary Mine Haul Roads Cross Section and Detail, did not previously show the eighteen inches of crushed rock or gravel mentioned in section 534.100-200 of the PAP.

The applicant has adequately addressed this deficiency.The Applicant has updated Drawing 5-23 to be consistent with the description provided in 534.100-200. Typical Cross Section NTS contains a note below the cross-section; *"18 " (inches) of Crushed Rock or Gravel to be Placed".*

Primary Road Certification

All drawings provided by the Applicant which are relative to road specifications have been certified by Mr. Chris McCourt, Utah registered professional engineer.

All primary roads which will be constructed or re-constructed must receive professional engineer certification that they have been constructed according to the approved plans after they have been completed. This requirement is particularly pertinent to the re-construction of Kane County Road #136 (K3900).

Other Transportation Facilities

The task 2910 review generated the following deficiency; *"The Applicant should modify the comment in section 527.200 of the PAP that states "As currently planned, no natural drainage ways will be altered or re-located due to road construction," to acknowledge that there will be a permanent diversion in Lower Robinson Creek to allow for maximum economic recovery, but not to facilitate road construction".*

The applicant has adequately addressed this deficiency by adding text to section 527.220 (Chapter 5, page 5-35) to clarify that Lower Robinson Creek will be temporarily diverted in order to maximize the economic recovery of coal from that area and not to facilitate road construction.

Findings:

The Applicant has adequately addressed the deficiencies identified in the Task ID # 2910 written on August 8, 2008.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Disposal Of Noncoal Mine Wastes

The Applicant met the requirements of this section. The Applicant outlined how they would comply with these regulations in Section 528.330 through Section 528.334.

Coal Mine Waste

The Applicant met the requirements of this section. The Applicant stated in Section 528.320 "Not Applicable". The Applicant does not anticipate that coal mine waste will be produced at the site. Coal mine was is defined in R645-100 as coal processing waste and underground development waste. The Applicant does not anticipate underground development waste because only surface mining will be done and no coal processing (other than crushing and screening) will occur on the site.

Refuse Piles

The Applicant met the requirements of this section. The Applicant stated in several area of the PAP, including Section 528.320 that no refuse pile would be needed.

Impounding Structures

The Applicant will not construct impounding structures of coal mine waste.

Chapter 5, pages 5-47 through 5-49 discuss the five sediment impoundments which will control and treat runoff from the disturbed area. A geotechnic analysis of the impounding embankments for these structures is contained in Appendix 5-1. The minimum long term static safety factors for these ponds ranges from 2.2 to 5.3 (minimum requirement 1.3).

R645-301-533.200; Foundation preparation and construction is addressed in section 533.200, page 5-48.

R645-301-533.300; An analysis of the affects of a rapid draw down on the pond embankments is contained in Appendix 5-1. The analysis says that no additional protection measures are needed for the impounding embankments should a naturally occurring rapid

drawdown of the pond water volumes occur. The resulting safety factors for the embankments range from 1.2 to 1.9.

Coal Processing Waste Dams and Embankments

The proposed mine plan does not anticipate the construction of any coal processing waste dams and embankments (See Chapter 5, page 5-3.

Burning And Burned Waste Utilization

The Applicant met the requirements of this section. The Applicant will not have coal mine waste at the site. See Section 528.320

Return of Coal Processing Waste to Abandoned Underground Workings

There are no underground workings at the site.

Excess Spoil

The Applicant did not meet the requirements of this section. The Applicant described how the excess spoil would be handled in several sections of the PAP, including, 526, 528, 535, and 536.

The pre-topographic maps and the reclamation maps show that the Applicant located the spoil pile in naturally stable areas. Drawing 5-3 and 5-35 show the areas where excess spoil will be placed. Drawings 5-35 and 5-36 show the design of the fill. Appendix 5-1 is a geotechnical analysis of the sediment impoundments and excess spoil structure prepared by Taylor Geo-Engineering, LLC. The Applicant does not plan on disposing of coal mine waste in the excess spoil pile (521.143).

The excess spoil pile is designed to minimize effects on surface and ground water due to leaching and surface water runoff: design details are in Section 535 (745.100). A spring and seep survey identified no springs or wet weather seeps in the proposed excess spoil area. The location for the excess spoil pile encompasses an area of dry meadow west of County Rd. 136 (shown on Plate 3-1). This area is identified potentially sub-irrigated (App. 7-7 (pg. 10). The soil in dry meadow area is map unit 6 (Graystone-Cookcan-Jonale Family complex, 1 – 5% slopes) which is described in Chap. 2, page 13 as medium to coarse textured soil with wet conditions. No underdrains are planned for the excess spoil structure. The final surface of the excess spoil pile will be regraded to a contour that will route water from snowmelt and rainfall around the excess spoil (Drawing 5-35). No manmade water courses are present in the excess

spoil area (745.100). Although Appendix 5-1, Slope Stability Analysis for Proposed Excess Spoil Structure and Sediment Impoundments states that the eastern 1/3 of the spoil pile can be constructed up to 90 feet in height and up to 120 feet on the western 2/3 portion with 3H:1V slopes, the actual finished design will only climb to a height of 75 to 86 feet on the east end.

Section 535, p. 5-52 states, "Excess spoil will be placed in designated disposal areas within the permit area in a controlled manner. The fill and appurtenant structures will be designed using current, prudent engineering practices and will meet any design criteria established by the Division".

Task 2910 deficiency: R645-301-535.140, *"In Section 528.310 and 535.100, the Applicant states that spoil will be placed in lifts not to exceed four feet in thickness and meet a 90% compaction based on the standard Proctor tests. The Applicant needs to provide the Division with the specifications of the equipment that will be doing the compaction. The Division is unaware of any equipment that can compact lifts up to four feet thick and achieve a 90 % Proctor."*

The Applicant provides a revised geotechnical analysis for sediment pond embankments and excess spoil pile in Appendix 5-1, based on the revised design of the spoil. "The revised design of the excess spoil and fill above approximate original contour provides concave slopes that grade from 5h:1v to 4h:1v to 3h:1v, bottom to top. This change in the slope design has allowed for lowering the compaction specification of the spoil to 85 %."

Appendix 5-1 states that laboratory testing of the proposed fill materials was completed at 90 percent of the standard Proctor, which confirms that a 90 % Proctor standard can be met. Previously, a standard Proctor of 90 % was required where minimum long-term static safety factors are called for in the Coal Mining Rules. However, the federal regulations were revised to eliminate the minimum 90% requirement for Proctor, as long as professional engineers were willing to certify, in the required constructions inspections, that adequate compaction was being attained to meet the 1.3 or 1.5 static safety requirement.

The 85% Proctor specification will be met by the method of construction and the equipment used (p. 5-52). Large haul trucks (100 to 240 ton) will dump the dirt in placeon each lift and a dozer(s) will spread the spoil into four foot lifts. The spreading process will require tracking over the spoil lift repeatedly with the dozer (D10 to D11 size). In addition, most of the spoil lift will also be repeatedly traveled over by the large haul trucks in order to place the material on each lift. The pressure exerted on the four foot lifts from the large mining equipment will provide sufficient compaction to meet the 85% specification. Text in Sections 528.310 and 535.100 has been revised to reflect the revised 85% compaction specification.

Based upon the plan view depicted on Drawing 5-3, it appears that approximately sixty percent of the excess spoil volume will be placed in the coal recovery or "pit" area. Lift

thicknesses and grades will be monitored such that they do not exceed the four foot thickness requirement by using GPS technology.

Section 528.310, p. 5-11 describes the method to be used to handle excess spoil generated by the project. Final slopes will be regraded to a maximum slope of 3h:1v. The top of the fill will be sloped to approximately 2 % to prevent pooling of water and to re-establish drainage to original flow patterns. Refer to Drawings 5-3 and 5-35 in the PAP. The spoil will be placed with dump trucks. Then, dozers will be used to spread the material into four foot lifts. The fill will meet at minimum 85% compaction as related to the standard Proctor. The Applicant does not state how the standard 85% Proctor will be confirmed. Proctor compaction is one of the standards used to determine whether the fill design will meet the minimum static safety factor of 1.5,. Therefore the Applicant must describe how the professional engineer will determine that the minimum 85% Proctor is being met.

The Applicant must specify how the professional engineer will confirm that adequate compaction requirements (Proctor standard) will be met (i.e., by nuclear density examination, or other means) as part of the required periodic inspections mandated under R645-301-514.100, 514.311, and R645-301-514.120. Appendix 5-1, page 8 of 9, section 8.0 Recommendations, of the Taylor Geo-Engineering slope stability analysis for the spoil fills (85% Proctor) and sediment pond embankment stability (90% Proctor), states that an engineer should be present to periodically verify the placement and compaction of fill materials in accordance with Appendix F of the geotechnical report and the State of Utah R645 Coal Mining Rules.

Appendix F contains Recommended Earthwork Specifications authored by Taylor Geo-Tech Engineering. Appendix F discusses monitoring of design specifications for the cuts and fills associated with the excess spoil pile construction and the sediment pond embankments to confirm that adequate compaction is being performed during the construction processes. Nine procedure recommendations are listed. Saturated soils should be placed in areas where they will have little to no effect on the stability of the filled area. Native soils will be ripped to a minimum of twelve inches where they will form the sub-grades for pond embankments.

The application is deficient. The permit applicant must commit to adhering to the construction recommendations contained in APPENDIX F during the construction activities for the spoil fills and sediment pond embankment construction periods. These are relative to establishment and determination that the minimum static safety factor of 1.5 can be met for spoil fills and a 1.3 can be met for embankments..

Findings:

R645-301-514.100 and 514.120 require regular inspections during construction and placement of fill and confirmation that the fill has been constructed and maintained as designed

and in accordance with the approved plan. A critical component of meeting the minimum required 1.5 long term static safety factor is compaction, and the Applicant has not stated how the professionally certified State of Utah engineer will confirm that the 85 % Proctor compaction standard will be confirmed. This confirmation of adequate compaction information must be provided as part of the inspection report provided to the Division under R645-301-514.120

The information provided in the application is not considered adequate to meet the requirements of this section. Before approval, the Applicant must provide the following in accordance with:

R645-301-514.100, The Applicant must commit to regular inspections during placement and compaction of fill materials. [PH]

R645-301-535.100, This rule requires that the fill be designed. The Applicant must commit to meeting all of the recommended earthwork specifications contained in Appendix F for spoil fills and impoundment embankments. This can be done by reference to the Appendix in Chapter 5, Section 528.310.• Rather than stating that "excess spoil will be...concurrently compacted as necessary to ensure mass stability and to prevent mass movement during and after construction, " the Applicant must specify how the professional engineer will confirm that adequate compaction requirements (Proctor standard) will be met (i.e., by nuclear density examination, or other means) as part of the required periodic inspections mandated under R645-301-514.100, 514.311, and R645-301-514.120. [PH]

R645-301-514.120, This rule requires certified inspection reports of fills during construction. The Applicant must provide confirmation that compaction requirements meeting the minimum 85 % Proctor standard are being met as designated within the Taylor Geo-Tech slope stability analysis for spoil fill areas. •The inspection report must include a description of the test method which was used to determine that adequate compaction is being obtained as the fill is being placed. •The inspection report must include all other standard engineering test methods used to determine that a minimum long term static safety factor of 1.5 can and will be achieved. •The report must include any appearances of instability, structural weakness, and other hazardous conditions. [PH]

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

Commitments in Sections 513.500, 529, 541, 542.700, 551, 731, 738, 748, 755, and 765 to meet the requirements of the Coal Mining Rules for managing Mine Openings, including exploration bore holes, water wells, and monitoring wells.
Sections 513.500, 529, 541.100-400, 542.700, 551, 731, 738, 748, 755, and 765 outline the procedure that will be used for abandonment and closure of wells, including exploration holes and boreholes used for water wells or monitoring wells.

Findings:

Information on Mine Openings meets the requirements of the Coal Mining Rules.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Impoundments

Chapter 5, page 5-47 of the Task ID # 3100 application states that no impoundments meeting the NRCS Class B or C criteria for dams in TR-60, or the size or other criteria of 30 CFR Section 77.216 (a) are planned for the Coal Hollow Mine.

The proposed mine plan anticipates the construction of five sediment control ponds, (ponds #1, 1B, 2, 3 and 4). Designs for these ponds are contained as Figures 12, 12B, 13, 14 and 15. A geotechnical analysis of the embankment stability for the proposed structures is contained in Appendix 5-1. The minimum static safety factor for impounding embankments is 1.3 for a normal pool with steady state seepage saturation conditions (R645-301-533.110). All of the proposed pond designs have static safety factors ranging from 2.2 to 5.3.

Task 2910 deficiency: *"The Applicant must state how the impoundments will be protected from rapid drawdown. Rapid drawdown can occur in earth dams when rapid reductions in the water level produce dangerous changes in pore water pressure. This occurs because the water in the soil tends to flow back into the reservoir through the upstream face. In this scenario, even a period of some weeks may bring about a 'rapid' change in the pore water pressure distribution".*

The Applicant has submitted a revised Appendix 5-1, Slope Stability Analysis for Proposed Excess Spoil Structure and Sediment Pond Impoundments, prepared by Taylor Geo-Engineering, LLC. The rapid drawdown analysis was performed for ponds #1, #1B, 2, 3, and 4 and the report is contained on pages 6 and 7 of the slope stability analysis.

The rapid drawdown analysis was performed under the assumption that the spillways became plugged, and the basin impounds water to the top of the embankments. Then the water is released or pumped down to the bottom of the basins. The geo-tech analysis utilized soil strengths based on "total stress conditions" as determined from the tri-axial shear tests. The Taylor report #307001 states *"it should be noted that rapid drawdown is highly unlikely since spillway and outlet piping will be no more than four feet below the top of embankments"*. The safety factors reported in the rapid drawdown analysis are considered conservative and range from 1.2 to 1.9. Based on these, no additional protection for the embankments is felt to be necessary.

Findings:

The Applicant has adequately addressed the deficiencies expressed in the Task ID # 2910 deficiency list, dated August 4, 2008.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

The Applicant listed the support facilities in Section 526.220. The Applicant has added minor facilities to Drawings 5-3, 5-4, 5-5,5-6,5-8A, 5-8B, 5-8C.

Drawing 5-3 Facilities and Structure Layout shows the plan view for the surface facilities which includes a shop, offices, coal stockpile area, coal reclaim and loading facilities, etc.

A 750 gallon septic vault is depicted on Drawing 5-6, in conjunction with the 150 foot by 108 foot office building.

Drawing 5-7 shows a 208 foot by 108 foot shop building. This building will house a 750 KVA generator. A 1200 KVA generator is shown on Drawing 5-8B between the coal stockpile and the truck dump hopper. All electrical power for the Mine facilities area is provided by the two diesel generators. Drawing 5-8B, Facilities and Structures / Electrical, shows how sub-surface electrical conduits will be run to provide power from the diesel generators to the various

surface facilities. There are no high voltage electrical transmission lines shown on any of the PAP maps.

Drawing 5-8 and 5-8A shows an equipment wash bay with dimensions 50' X 60' X 50' height. The wash bay has a central floor drain which reports to a sump. How the sludge material and water from the sump will be handled must be described in the surface drainage plan.

Drawing 5-8 shows a 28,000 gallon fuel storage facility which contains two 12,000 diesel tanks and a 4000 gasoline storage tank. A 50,000 gallon oil storage containment is also shown.

The Applicant must develop and P.E. certify a spill prevention and counter measure plan for these bulk storage facilities (R645-301-731.121).

Many comments were received concerning dust control and the implications for visibility in the area. Task 2910 deficiency: **R645-301-526.222 and R645-301-423,** *"The Applicant must give a detailed description of the specific dust control structures that will be installed to ensure that fugitive dust is controlled".*

Drawing 5-8C, **Facilities and Structures, Water Plan** shows an aerial view of the plan to provide water procurement and storage for application on the Coal Hollow mine haul roads. Section 526.220 under **Dust Control Structures** contains a description of the water systems. A solar powered ground water pump will supply volume to two 16,000 gallon portable, steel water tanks. The tank located in the facilities area will provide non-potable volume for the wash bay, and septic facilities at the office building. The tank located along the primary haul road to the mining area will provide volume for the water trucks controlling fugitive dust within the permit area.

Findings:

The Application does not meet the requirements of the Utah Coal Rules. In accordance with the requirements of :

R645-301-731.121, Protection of Surface Water Quality, R645-301-751, Water Quality Standards. The Applicant must develop and P.E. certify a spill prevention and counter measure plan for the bulk storage facilities which are to be built as part of the Alton Coal Development Coal Hollow Mine surface facilities. The MRP must include information stating how the surface facilities will be operated in order to meet the performance standards of R645-301-750. [PH]

USE OF EXPLOSIVES

Regulatory Reference: 30 CFR Sec. 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

Analysis:

General Requirements

The Applicant does not anticipate the need for blasting. Section 523 states that blasting may be implemented after clearing vegetation. Section 524 suggests that a "cursory analysis" indicates blasting may not be necessary for this mining operation due to the soft clay and shale overburden and due to the mining of the coal from on top of the seam to avoid a wet clay layer below. However, submittal of a blasting plan has been provided in accordance with R645-301-524.

Section 627, p, 6-19, Overburden Thickness and Lithology, provides information relative to the types and thicknesses of overburden in the proposed mining area. An alluvial layer ranging from zero to fifty feet in thickness overlies a shale layer which varies from 2 to 200 feet in thickness.

The original mine plan did not include a blasting plan as the Applicant proposed to remove overburden using trucks and front end loaders. This method does not include a means to break overburden, which is the primary function of explosive usage.

The applicant submitted a generic blasting plan in Section 524, Blasting and Explosives, p. 5-22. The blasting plan is contained in Appendix 5-4. The Applicant has committed to providing the Division with a blast design prior to commencement of blasting conditions. The design will be based upon the geologic conditions encountered during the overburden and coal removal process.

Preblasting Survey

All reference to using five pounds of explosive has been removed from the PAP.

There are two dwellings within one-half mile of any part of the permit area. These are the Swapp and Pugh homes. The Applicant has committed to notifying these families at least 30 days in advance of any surface blasting how to request a pre-blast survey of their dwellings.

The Swapp and Pugh Ranches each contain several other out buildings. Only the homes have foundations, with frame construction. All out buildings are wood frame construction.

General Performance Standards

The Applicant addressed the general performance standards in Section 524 of the PAP.

The Applicant has committed to conducting all surface blasting activities between sunrise and sunset, unless an unscheduled blast is needed (See Chapter 5, page 5-24, section 524.420).. If so, the unscheduled blast will be approved by the Division, based upon a showing by the Applicant that the interests of the public will be prrotected from noise and other possible adverse impacts.

The Applicant has committed to publishing and distributing a proposed blasting schedule at least 10 days but not more than thirty days prior to the initiation of blasting activities.

Blasting Signs, Warnings, And Access Control

Section 524.500-532, Blasting and Warning Signs, Access Control, is discussed on page 5-25. The Applicant will place blasting signs reading "Blasting Area" within 100 feet of any public right-of-way. All Mine entrances will have signs with explosive usage warning signs, with identification of the various audible warning and all-clear signals. All persons living or working within one-half mile and all personnel working within the Mine permit area will be knowledgeable in the meaning of the audible signals.

Alton Coal Development will control access to blasting areas for the purpose of keeping livestock and un-authorized personnel out of the area until ACD determines that no unusual hazards have been created by the mining sequence.

Control of Adverse Effects

Chapter 5, page 5-26, section 524.600-610, Adverse Effects of Blasting, contains the Applicants commitment to conduct blasting to control air blast, ground vibration and fly rock outside of the permit area. Mining will be conducted so as to prevent changes in the course, channels or availability of surface and ground water outside the Mine permit area.

The maximum legal weight of explosives per borehole when approaching within 1,000 feet of the Swapp ranch (Dames) dwelling must be calculated using a scaled distance factor of 50.

The maximum legal weight of explosives per borehole when approaching within 1,000 feet of the Sorensen ranch must be calculated using a scaled distance factor of 55.

Records of Blasting Operations

Section 524.700 Records of Blasting Operations lists the requirements for properly documenting all surface blasts to be conducted by Alton Coal Development. The PAP contains the required commitment to maintain all blasting records for a minimum period of three years for Division or public inspection purposes.

Findings:

The information provided in the application meets the requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Map 1-2, Project Area LBA shows the project area and the proposed expansion for the federal leases. Map 5-10, Coal Removal Sequence, shows the anticipated dates for when coal would be mined in the permit area.

Deficiency task 2910: **R645-301-521.141,** *"The Applicant must show on Map 5-10 or a similar map the anticipated **dates** for when the Applicant would mine coal from the expansion areas. The Division needs to know the dates when the applicant anticipates acquiring additional sub-areas because the preferred reclamation plan is based on additions to the permit area".*

Drawing 5-2, Disturbance Sequence, shows the areas to be disturbed over four years of coal recovery. The final pit (Year 3) is the area in question relative to the reclamation plan for this site. In Year 3, topsoil removal, storage and overburden removal will expose the minable coal seam in the final pit area, It is not possible for the Applicant to anticipate dates for expansion, because the majority of the coal outside of the proposed permit boundary is federally owned and which must be acquired through the Lease By Application (LBA) and bidding process.

The Permittee has provided two options for the reclamation of the final pit area. The first option is to obtain leases outside the proposed permit boundary, and use spoil from the new leases to reclaim the final pit area of the proposed Coal Hollow permit boundary. This is the Applicant's preferred option and it is shown on Dwgs. 5-35 and 5-36. Drawing 5-38, Reclamation Sequence, shows that the extreme south and north areas (processing/loading facilities) will be reclaimed in Year 4.

The Applicant has requested approval of a two year time frame between final pit coal recovery and reclamation, to facilitate implementation of the preferred reclamation scenario. If

Alton Coal Development cannot obtain the federal leases within two years of coal recovery in the final pit, then they propose to proceed with the alternative reclamation scenario.

The Division can not allow a period of two years to pass between final coal recovery in the proposed permit area and initiation of reclamation (see deficiency written under R645-301-542.100 and R645-301-553, Backfilling and Grading in this Technical Analysis).

Mining Facilities Maps

The Applicant did not meet the requirements of this section. The Applicant must label coal stockpile, conveyors and coal load out faculties on Drawing 5-3, R645-301-521.170.

Mine Workings Maps

The Applicant met the requirements of this section. There are no mines in or near of the permit area.

Certification Requirements

The Applicant met the requirements of this section. A registered professional engineer certified all appropriate maps.

Findings:

The information provided is not adequate to meet the requirements of this section. Before approval, the Applicant must provide the following in accordance with:

R645-301-521.141, Restated from Task 2910, The Applicant must provide *"a detailed timetable for the completion of each major step in the reclamation plan"*. This requirement is relative to the initiation of final pit reclamation activities. [PH]

RECLAMATION PLAN

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

The Applicant states that due to the swell factor excess spoil would be generated and mentions a request for a variance from the approximate original contour requirements in various sections of the PAP including, Section 512.260, Section 553.200, and Section 553.120.

Task #2910 deficiency was written to obtain information about the request for variance, as follows: **R645-301-553.110 and R645-301-553.800**, *"The request for variance from Approximate Original Contour must describe whether the restoration of original drainage patterns can be achieved (R645-301-762.100) or whether the criteria of R645-301-553.800 apply to this surface mine. Excess spoil should be graded to attain the lowest practical grade (R645-301-553.800) and provide a natural appearance to the contours of the spoil pile which would include irregular slopes and irregular surface such that the reclaimed site is compatible with the natural surroundings (R645-301-412.300).*

Alton Coal Development, LLC has responded that the criteria of R645-301-553.800, Backfilling and Grading; Thick Overburden applies to the Coal Hollow surface mine. The Alternate Reclamation Scenario (adjacent Federal coal leases not obtained) describes an estimated 1.8 million cubic yards of excess spoil to be generated during the three year life of mine (Section 553, p. 5-65).

The spoil pile covering approximately 85 acres of the disturbed area (435 acres total) will be reclaimed to the requirements of the approved variance from approximate original contour. Section 553.110 explains that *"In areas where excess spoil and variance from approximate original contour occur, the slopes will be re-graded to a maximum angle of 3h:1v and most slopes are flatter (than) as shown on Drawings 5-35 and 5-36."* Appendix 5-1 contains a geo-technical analysis which indicates that the spoil material fills will be stable and meet the minimum long term static safety factor of 1.5. The Applicant has re-designed the proposed excess spoil fills and fill above the approximate original contour to provide a natural appearance. Concave fill slopes will be implemented to minimize erosion. The revised design is shown on Drawings 5-35 and 5-36. The original drainage pattern of Lower Robinson Creek will be restored to a meandering channel.

The mining and reclamation plan will achieve the following backfilling and grading requirements for the excess spoil pile:

- Minimize off-site effects.
- Achieve a final surface configuration that closely resembles the general surface configuration of the land prior to mining. The main concerns are slope length and grade, and whether the drainage patterns tie into the surrounding drainages.
- Provide a subsurface foundation for a vegetative cover capable of stabilizing the surface from erosion.
- Support the approved postmining land use.

Findings:

The information provided in the permit application meets the requirements of this section.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

No small depressions or impoundments of any kind will be retained after final reclamation.

The Applicant has requested a variance from the requirements of R645-301-553 relative to the 60 day limit or 1500 linear feet of distance from the coal recovery area to the backfill area for Pits 24 through 30. With this variance, the Applicant states that impacts to the reclaimed areas on the west edge of the currently proposed permit boundary will be minimized, as excess spoil generated from Pits 24 – 30 can be used to backfill pits created from extraction of coal on Federal lands.

The Permittee has provided two options for the reclamation of the final pit area. The first option is to obtain leases outside the proposed permit boundary, and use spoil from the new leases to reclaim the final pit area of the proposed Coal Hollow permit boundary. This is the Applicant's preferred option and it is shown on Dwgs. 5-35 and 5-36. Drawing 5-38, Reclamation Sequence shows that the extreme south and north areas (processing/loading facilities) will be reclaimed in Year 4.

In order to receive additional time to achieve rough backfilling and grading in Pits 24 through 30, ACD must demonstrate through a detailed analysis that additional time is necessary, in accordance with the requirements of R645-301-553and R645-301-542.200. ACD's request

for an exemption from the requirements of R645-301-553 for Pits 24 through 30 is based upon the following conclusions by the Applicant:

1) A spoil verses pit backfill deficiency exists as a result of the high stripping ratios encountered in Pits 10 through 15.
2) The fill above original contour is constructed because overburden from pits that are 150 feet + (Pits 10-15) does not fit into pits that are 70 feet deep or less.
3) It takes overburden from several pits that are 80 feet in depth (Pits 16 – 30) to fill one pit that is more than 150 feet in depth.
4) Granting an exemption from the requirements of R645-301-553 would eliminate the need for temporary spoil stockpiles keeping contemporaneous reclamation in process.

These conclusions seem reasonable to allow a possible exemption from the requirements of R645-301-553 for Pits 24 through 30. However, final approval for an exemption from the requirements of R645-301-553 will be based upon how the Applicant meets the requirements of R645-301-553 for Pits 2-8, Pits 9-15 and Pits 16-21 relative to timely reclamation. The Division will require that the Applicant provide the Division with updates on the progress made towards procurement of any adjacent Federal coal leases, see deficiency below.

If the Permittee can not obtain additional coal leases in Sections 29 and / or 30, the Permittee must commit to reclaiming the most southern section of the coal recovery area, so that re-location of the Kane County Road #136 (K3900) can be initiated as soon as possible. The Applicant would like the Division to grant a two year time frame between final pit coal recovery and implementation of the alternative reclamation scenario. [If ACD cannot obtain the new leases, the proposed plan is to allow ACD to proceed with the alternative reclamation scenario (within two years from the time that coal recovery ceases.] However, The Division can not allow a period of two years to pass between final coal recovery in the proposed permit area and reclamation of Pits 24-30. A limited amount of time might be approved by the Division at the completion of coal extraction activities from the final pit, prior to intiation of reclamation activities, pending the disposition of the federal lands at that time.

With regard to Task 2910 deficiency: **R645-301-553.130,** *"The Applicant must show that all reclaimed slopes (including those not associated with the excess spoil area) have a safety factor of 1.3 or greater and that the slope angles are less than the angle of repose. The Applicant includes safety factor calculations for the excess spoil areas but did not mention the safety factors in other areas. One way to address the issue is to identify the slopes that would have the lowest safety factors (longest slope and steepest slope) and show that they meet the minimum safety factor requirements. In addition, the Applicant must also state why the reclaimed slope angles are less than the angle of repose."*

Appendix 5-5, Stability Evaluation / Analysis for Reclaimed Slopes provides a slope analysis prepared by the mining and geotechnical engineering firm Seegmiller International,

under the direction of Dr. Ben L. Seegmiller, a Utah registered professional engineer. Reclaimed slopes will be constructed of the same Tropic Shale material as the excess spoil pile, but the spoil backfill will not be compacted. The proposed design will backfill and grade the reclamation slopes to a 3H:1V slope (vertical angle of 18.4 degree). The highest slope is anticipated to have a 20 foot vertical height. Material characteristics of the Tropic Shales are described on page 2 of the report. Tropic Shale materials "may have friction angles on the order of 24 degrees and cohesions of about 245 PSF".

Seegmiller International visited the Coal Hollow project area on August 8, 2008 to observe and measure angles of repose in the Mine area. The measured angles were reported to be approximately 33 to 35 degrees. The reclaimed slopes will thus be reclaimed to a vertical angle of 18.4 degrees, which is approximately one-half of the angle of repose of undisturbed native materials (33-35 degrees). The reclaimed slopes are noted as being generally dry, but some ground water could affect material characteristics within the slopes.

The Methodology of Slope Analysis is stated on p. 2 of Appendix 5-5 as follows:

"The stability analysis method that will be employed is based on limiting equilibrium concepts. At limiting equilibrium, the forces tending to create stability are exactly in balance with the forces tending to cause slope failure and, therefore, a safety factor of 1.00 exists. Greater or lesser safety factors allow the relative degree of safety of a slope to be measured."

Rotational failures were calculated via MCSLOPE, which was developed from PCSTABL5. *"MCSLOPE...calculates a deterministic safety factor (SFd) and uses a Monte Carlo technique to estimate the probabilistic factor of safety (SFp) and a probability of slope failure (P/F)."*

The following safety factors were determined by the Seegmiller analysis:

1) Dry Slope.....SF of 2.883 @ 20 foot high slopes at 3H:1V gradient.

2) Saturated Slope.....SF of 1.722 @ 20 foot high slopes at 3H:1V gradient.

The proposed fill slope design will be constructed to a 3H:1V gradient (or 18.4 vertical degrees). This vertical angle is approximately one-half of the general area angle of repose which has been determined at 33 to 35 degrees minimum. The planned slope angle is 14 degrees less than the angle of repose of the undisturbed areas.

With regard to Task 2910 deficiency **R645-301-553 and 542.200:** *"The Applicant will describe how and where the overburden will be placed for the initial box cut. • The Applicant*

must have a specific timetable for completing rough backfilling and grading in the PAP. • The Applicant must provide surveys of coal recovery at the end of each calendar month and show coal recovery on a plan view of the mining area at the end of each calendar month. • The Applicant must provide detailed descriptions of how overburden will be placed and provide documentation of placed backfill volumes, on a monthly basis. • The Applicant must provided rough backfill volumes taken from the survey of contemporaneous cross sections showing toe of backfilled slope on latitudinal and longitudinal basis in relationship to the coal seam being mined. • The Applicant must establish and follow a ground control plan for the safe control of all highwalls, pits and spoil banks, as approved by MSHA under 30 CRF77.1000 and the MSHA approved plan will be included as part of the mining and reclamation plan."

Initial Box Cut.

Placement of backfill for the initial box cut is dicussed in Section 553, p. 5-63. Overburden from Pits 1 - 8 will be removed and stored, then used for the reclamation of those pits. Drawing 5-15 shows three phases of coal recovery. Phase 1 involves mining of Pits 1-8 which have a low stripping ratio (approximately 5 cubic yards of burden : 1 ton coal). Spoil from the first three pits, including Pit 2 (the boxcut) will be placed in an excess spoil area located immediately west of Pit 1 (p. 5-63). When the excess spoil pile reaches 2.7 million loose cubic yards, the overburden from Pits 4- 8 will be used as backfill.

Phase 2 involves the mining of Pits 9-15. The overburden isopach of this area shows that the overburden and stripping ratio significantly increases (Dwg. 5-15). Quoting from the application:

> *"This increase and the shape of the mining boundary for the Permit Area require a fill above approximate original contour that is an extension of the excess spoil pile. Material from Pits 9-15 significantly exceeds the backfill capacity available from Pits 1-8. The fill above approximate original contour blends in with the excess spoil structure from Phase 1 and extends an additional 2,500 feet to the east."*

A review of Drawing 5-13, Strip Ratio Isopach, indicates that the stripping ratio in the Phase 2 coal recovery area can vary from 5.5 : 1 in the SW corner of the recovery area to as high as 11 : 1 in the NE corner of Pit 15. The Preferred Reclamation Scenario Table (assuming procurement of adjacent federal coal leases) indicates that the Phase 2 coal recovery will generate 5,842,000 excess loose cubic yards of spoil material, with a total of 8,583,000 excess loose cubic yards of spoil for Phases 1 and 2, at 22 % swell factor (p. 5-64).

Phase 3 covers the overburden and coal removal from pits 16 through 30. Stripping ratios vary from 4:1 in the SW corner (Pits 24 –30) to 7:1 in the eastern end of Pit 16. If federal leases are obtained (outside of the currently proposed permit area), overburden from those new

mining areas will be used to backfill the pits in Phase 3. This preferred scenario is so named because the Applicant feels the following will occur:

1) The preferred scenario for backfilling will minimize overall disturbance.
2) Resource recovery will be maximized by providing a transition into the federal reserves with minimal effect to the existing reclamation in the currently proposed permit area.
3) Variances from AOC over the Federal reserves will eliminate the need for an excess spoil storage area for a new box cut on the Federal reserves.
4) The preferred reclamation scenario provides a method for implementing concurring reclamation by eliminating temporary spoil stockpiles.

Specific Timetable.

A timeframe for completing rough backfilling and grading is provided on p. 5-65 which states the following: "In both scenarios (Preferred and Alternate), rough backfilling and grading operations will follow coal removal by not more than 60 days or 1500 linear feet." Text on Page 5-66 states that "mined areas will be backfilled and graded within 180 days following coal removal, or 1500 feet of the active coal removal face. It appears that the information in the two aforementioned paragraphs conflicts. However, they may not conflict if the Applicant means to say that the backfilling and grading completed in 60 days of coal removal and ready for topsoiling and seeding within 180 days following coal removal. The statement on p. 5-66 should be more clearly written in the Application.

The Applicant has described the backfilling and grading processes to be implemented during the three phases of coal removal in Chapter 5, pages 5-65 and 5-66. The closing statement of Section 553, Chapter 5, page 5-66, states the following; *"As currently planned, the initial mining areas will be backfilled to the planned post mining contour, graded and the topsoil replaced in late Year 1"*. A review of Drawing 5-10, Coal Removal Sequence indicates that the Applicant, Alton Coal Development, intends to extract coal from Pits 1-12 during Year 1. As stated above, "the current plan is to initiate backfilling of the initial mining areas....in late Year 1". This current plan does not meet the requirements of R645-301-553, which requires that backfilling and grading must be initiated no more than 60 days after coal recovery is completed, or a maximum of 1500 linear feet from the recovery area.

The current plan shows recovery of coal from Pits 2 through 8 covering a north / south distance of 2200 feet, as well as an additional 750 feet on an east / west direction from Pits 9 – 12 (all coal recovery during Year 1). This plan is double the length allowed in R645-301-553. This plan is deficient; in accordance with the requirements of R645-301-553, Backfilling and Grading, the Applicant must revise the current plan for backfilling, grading, topsoiling and revegetating stated on Page 5-66 such that it meets the requirements of R645-301-553. The Divison requires that Pit 4 rough backfilling and grading be completed before burden removal is initiated in Pit 9. Pits 1, 5, 6 and 7 must be completed (rough backfilling and grading before mining in Pit 13 is initiated.

Coal Recovery Reporting.

Alton Coal Development, LLC has made the following commitment, which is contained in Chapter 5, page 5-73: "Alton Coal Development, LLC will provide the Division, as part of the annual report for each calendar year, a plan view outline of the coal recovery, a 5 foot interval contour map of backfill progress and a reclamation progress map". This commitment is not adequate. It does not provide the Division with information on a frequency which is sufficient to ensure that the Applicant is meeting the requirements of **R645-301-553**, completion of rough backfilling and grading within 60 days or 1500 linear feet. Therefore, in accordance with the requirements of R645-301-542.100; Detailed Timetable of Each Major Reclamation Step, ACD will provide progress reports detailing when the rough backfilling and grading of Pits 2 and 3 will be initiated, and continue submitting those progress reports addressing rough backfilling and grading for the Phases 1, 2, and 3 coal recovery areas.

Monthly Backfill Volumes.

The Division is willing to accept a reporting frequency of every 60 days for placement and backfill of spoil where coal has been recovered. This reporting is necessary to ensure that coal recovery does not get too far ahead of rough backfilling and grading for any of the Phased coal recovery areas. The rough backfilling and grading of Pit 2 should be initiated before coal recovery has been completed in Pit 6 (approximately 1500 feet from northern edge of Pit 2). Once rough backfilling and grading in Pit 2 has been initiated, Alton Coal Development will continue to report to the Division, **every 60 days**, the following;

1. Coal recovery as it exists on a plan view map of the numbered pits;
2. The areas (coal recovery pits) where rough backfilling and grading has been completed;
3. The areas where coal recovery has been completed and contemporaneous rough back filling and grading is occurring.
4. The areas where grading has been completed, and topsoil is being placed.
5. The areas where seeding using the Division approved reclamation seed mix has occurred.

MSHA Approved Ground Control Plan.

Alton Coal Development, LLC has committed to obtaining an MSHA approved ground control plan for all highwalls, pits, and spoil banks prior to initiation of surface coal mining operations.

Three of the five items bulleted under task 2910 deficiency R645-301-553 and 542.200 are restated as separate deficiencies below under R645-301-553, R645-301-542.100, and R645-301-542.100 and R645-301-121.200.

Previously Mined Areas

There are no previously mined areas within the permit boundaries.

Backfilling and Grading On Steep Slopes

There are not steep slopes within the permit area.

Special Provisions for Steep Slope Mining

There are no special provisions for steep slope mining.

Findings:

The Division can not support the variance from the 60 day/1,500 feet requirement for backfilling and grading based upon the supposition of acquiring the adjacent federal leases (which have not yet been made available). The Division does not have the authority to grant excessive time lapses between final coal recovery in an approved permit area and initiation of reclamation activities. It is the Applicant's responsibility to obtain additional coal leases outside the approved DOGM permit boundary prior to completion of coal recovery within the approved permit area. The Division cannot allow a mined out area to sit idle for two years prior to implementation of the approved reclamation plan. The Division also has a responsibility to the citizens of Kane County, in that the re-construction of the County road should be completed in a timely fashion.

Three of the five items bulleted under task 2910 deficiency R645-301-553 and 542.200 are restated as separate deficiencies below under R645-301-553, R645-301-542.100, and R645-301-542.100 and R645-301-121.200.The information provided in the permit application does not meet the requirement of this section. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-542.100 and R645-301-121.200, A timeframe for completing rough backfilling and grading is provided on p. 5-65 which states the following: "In both scenarios (Preferred and Alternate), rough backfilling and grading operations will follow coal removal by not more than 60 days or 1500 linear feet." Text on Page 5-66 states that "mined areas will be backfilled and graded within 180 days following coal removal, or 1500 feet of the active coal removal face." It appears that the information in the two aforementioned paragraphs conflicts. However,

they may not conflict if the Applicant means to say that the backfilling and grading completed in 60 days of coal removal and ready for topsoiling and seeding within 180 days following coal removal. If the Division's interpretation of these two statements is accurate, please make the necessary corrections to the statement on p. 5-66. [PH]

R645-301-542.100; Detailed Timetable of Each Major Reclamation Step, The Applicant will provide a timetable detailing when the rough backfilling and grading of Pits 2 and 3 will be initiated. This reclamation step will be initiated before coal recovery has been completed in Pit 6 (approximately 1500 feet from northern edge of Pit 2). •The Applicant will provide progress reports detailing when the rough backfilling and grading of Pits 2 and 3 will be initiated, and continue submitting those progress reports addressing rough backfilling and grading for the Phases 1, 2, and 3 coal recovery areas. Alton Coal Development shall report to the Division, **every 60 days**, the following five items:

1. Coal recovery as it exists on a plan view map of the numbered pits.
2. The areas (coal recovery pits) where rough backfilling and grading has been completed.
3. The areas where coal recovery has been completed and contemporaneous rough backfilling and grading is occurring.
4. The areas where grading has been completed, and topsoil is being placed.
5. The areas where seeding using the Division approved reclamation seed mix has occurred. [PH]

R645-301-553, Backfilling and Grading, approval for an exemption from the requirements of R645-301-553 for Pits 24 through 30 will be based upon the demonstration that additional time is necessary, in accordance with the requirements of R645-301-553and R645-301-542.200. Progress towards procurement of any adjacent Federal coal leases will also be considered, along with timely reclamation of Pits 2-8, Pits 9-15 and Pits 16-23. The Division recommends that ACD apply for this variance ninety days before completion of coal recovery in Pit 24 and should include timely information relative to the procurement of any adjacent Federal coal leases. • The current plan shows recovery of coal from Pits 2 through 8 covering a north / south distance of 2200 feet, as well as an additional 750 feet on an east / west direction from Pits 9 – 12 (all coal recovery during Year 1). This plan is double the length allowed in R645-301-553. This plan is deficient; in accordance with the requirements of R645-301-553, Backfilling and Grading, the Applicant must revise the current plan for backfilling, grading, topsoiling and revegetating stated on Page 5-66 such that it meets the requirements of R645-301-553. The Divison requires that Pit 4 rough backfilling and grading be completed before burden removal is initiated in Pit 9.

Pits 1, 5, 6 and 7 must be completed (rough backfilling and grading before mining in Pit 13 is initiated. [PH]

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

There are no pre-existing mine openings relative to this permit application package. No new mine openings to underground workings will be developed as part of this proposed coal extraction process.

Findings:

The requirements of this section of the R645 Coal Mining Rules are not relevant to this permit application package at this time.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

Reclamation

Section 542 lists all roads which will be reclaimed as part of the approved post-mining land use.

The primary haul roads constructed during operations will be reclaimed. Section 542, p. 5-59 contains a narrative of the reclamation procedure for roads which will not be retained as part of the post-mining land use.

In Section 542-100 through 600, the Applicant committed to reclaim all roads according to the requirements of R645-301-542.600.

Retention

Page 5-59 lists three roads to be retained: the County Road 136, the Lower Robinson Creek Road on Pugh property, and the road south to the water well (which will also provide access to the Swapp Ranch). The three roads are shown on Dwg. 5-35 and 5-37. Neither drawing shows the restoration of the Swapp Ranch access road. The Application should provide for restoration of the existing road access to the Swapp Ranch (owned by Dame), unless an agreement has been reached for Dame to access his property via the Pugh road and the Water Well Road. If so, please provide those agreements in Chapter 1.

Drawings 5-22C illustrates the reclaimed road across Pugh property to the boundary with the USFS. This road approximates the original alignment of K3993. The Applicant must verify this re-alignment with the County.

Drawing 5-22D illustrates the construction of a new road to the water well that will remain post-mining.

There is no design drawing shown for the access road to the Swapp Ranch (illustrated on Dwg. 5-35 and 5-37) because it will have the same specifications as the water well road design Dwg 5-22 D.

Drawing 5-35 shows a revised CR 136 alignment around the spoil pile (plan view) on fill above approximate original contour as the Preferred Reclamation scenario. Drawing 5-37 shows the alternate reclamation scenario, with a straight alignment through the reclaim pit area, also on fill, but at the approximate original elevation.

Drawing 5-22E shows a plan view, gradient profile, and cross-section of the re-alignment of County Road 136 (K3900) around the reclaimed spoil pile area (the preferred scenario). The private landowner (C. Burton Pugh) has given Kane County a Grant of Easement (See Appendix 1-7) for this re-alignment. Dwg. 5-22E ties into the plan view and gradient profile of Dwg 5-22F at cross-section 60 + 51.82 feet.

Drawing 5-22F, shows a plan view, gradient profile, and cross-section of the most southern section of County Road 136 (K3900). from cross-sections 61+00 to 92+00, ending at 92 + 85.55 feet. The "typical roadway section(s)" on both 5-22E and 5-22F are identical.

Drawing F-22G is a repetitive drawing which shows the same road cross section and construction specifications as 5-22E and 5-22F.

There is no design drawing provided for Option A described in the Amended Grant of Easement and Assignment Amendment for County Road K3900 found in Appendix 1-7.

All road designs are P.E. certified by Mr. Chris McCourt, Utah registered professional.

County Road #136 will be re-constructed within the permit area by the Kane County Road Department. *"The re-construction will occur concurrently with the final stage of reclamation as scheduled on Drawing 5-38 and is expected to be completed by the end of Year 4,"* (Chapter 5, page 5-59). The Applicant has provided details for the reconstruction of County Road 136 on Drawing #'s 5-35, 5-37, 5-22E, and 5-22F. However, as can be determined from analysis of Drawings 5-36, and 5-37A, County Road # 136 is to be constructed on top of backfilled Tropic Shale material in varying from 80 feet to 100+ feet in thickness.

The Applicant must either develop a mine plan which provides for leaving the coal beneath the Kane County road right-of-way or provide a geotechnic analysis (in accordance with R645-301-527.250) of the subgrade fill of the to be re-constructed Kane County road #136 right-of-way which confirms that construction specifications can be met. The soils analysis must include testing of weathered Tropic Shale materials.

According to Section 627, p. 6-19, Overburden Thickness and Lithology, *"The lower portion of the Tropic Shale overlies the coal seam which is being proposed for mining in thicknesses up to 200 feet. The Tropic shale consists predominantly of soft shales, silty shales and claystones, with occasional thin layers of siltstone and bentonite-like clay layers up to about two feet in thickness."*

Shales exposed to the atmosphere, absorb moisture then disintegrate and crumble. This process is called slaking. This is common in shales associated with coal seams, and the Division needs an analysis discussing whether these materials can meet class "B" subgrade requirements, especially in thicknesses up to 100 + feet.

If the Applicant provides adequate engineering support confirming that the backfilled spoil areas within the County road #136 right-of-way can meet Kane County road department specification for sub-grade, the Applicant must provide text in the PAP which clearly states that ACD will effectively reclaim the sub-grade area within the Kane County Road #136 right-of-way. The Applicant must meet all R645 backfilling and grading requirements up to the point that the Kane County Road Department takes over jurisdiction for the re-construction of the road in its original alignment.

Findings:

The information provided in the permit application does not meet the requirement of this section. Before approval, the Applicant must provide the following in accordance with:

R645-301-542.600, Maps and narrative in the application must describe reconstruction of County Road 136 to its original alignment as requested by the County. The

application must provide drawings and specifications for Option A described in the Amended Grant of Easement and Assignment Amendment for County Road K3900 found in Appendix 1-7. •Drawings 5-22C illustrates the reclaimed road across Pugh property to the boundary with the USFS. This approximates the alignment of K3993 which was temporarily closed during mining. The Applicant must document this re-alignment and re-construction of K3993 with the County. [PH]

R645-301-527.250 and R645-301-534.200, R645-301-512.250, Design and Reconstruction of Roads, The Applicant must provide a geotechnical analysis of the spoil materials associated with the Tropic Shale and alluvium for use as sub-grade material as part of the re-construction design of all post mining roads within the coal recovery area. A Utah professionally certified civil engineer specializing in highway construction must perform the analysis for the two roads to be reconstructed on fill:

1) The Class "B" Kane County road #136 which must be capable of handling the heaviest vehicle weights.
2) The Swapp Ranch access road (shown in both reclamation scenario drawings, Dwg 5-35 and Dwg. 5-37 and having the same specifications as the Water Well Road (Dwg. 5-22 D)

The application must include the results of the geotechnical analysis and any resulting design standards for road construction required to make the sub-grade materials stable. If the Applicant cannot provide adequate geotechnical confirmation or achieve the design standards to ensure that all post-mining roads to be reconstructed on spoil will be stable, then the Applicant must consider other options. [PH]

R645-301.514.120, The Application must state that copies of the spoil placement engineering inspection reports for the County road right-of-way and the Swapp Road will be provided to the Division. These inspection reports must document the Proctor compaction and other design requirements will be achieved for the reconstructed roads. The Division can then coordinate with Kane County and the Applicant regarding sub-grade adequacy for reconstruction of the County Road #136 and the Swapp Road in the mined out area. [PH]

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

General

Please refer to the discussion contained under **R645-301-553, Backfilling and Grading.**

Findings:

The findings made under R645-301-553, Backfilling and Grading have determined that the Task ID # 3100 Permit Application Package is deficient.

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sec. 817.131, 817.132; R645-301-515, -301-541.

Analysis:

The requirements addressing temporary cessation are addressed in section 515.300, Chapter 5, page 5-7 of the permit application package.

All requirements of R645-301-515.321 and 515.322 have been committed to by Alton Coal Development.

Findings:

The permit application package meets the requirements for Cessation of Operations.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Affected Area Boundary Maps

Map 1-2, Project Area LBA shows the project area and the proposed expansion for the federal leases. Map 5-10, Coal Removal Sequence, shows only the anticipated dates for when coal would be mined in the permit areas. Coal recovery from expansion areas will be requested

within ninety days of final reclamation of Pit 24, see Reclamation Plan/Backfilling and Grading Findings in this Technical Analysis.

Bonded Area Map

The following drawings depict the permit area to be bonded prior to receipt of a Utah mining permit:

5-1...Pre-Mining Topography

5-2...Disturbance Sequence

5-9...Coal Extraction Overview

5-10...Coal Removal Sequence

5-13...Strip Ratio Isopach

5-14...Coal Thickness

5-15...Overburden Isopach

Reclamation Backfilling And Grading Maps

The following drawings depict the areas which are to be reclaimed, following coal recovery;

5-38...Reclamation Sequence

5-35...Post-Mining Preferred Topography

5-36...Post-Mining Preferred Cross Sections

5-37...Post-Mining Alternate Topography

5-37A...Post-Mining Alternate Cross Sections.

Reclamation Facilities Maps

Task 2910 deficiency, *"The Applicant must either list in the PAP or show on a reclamation map those facilities that will remain after final reclamation or state specifically in the PAP that all facilities will be removed at final reclamation".*

The Applicant has provided Drawings 5-35 and 5-37 which depict plan views of both the preferred reclamation scenario and the alternate reclamation scenario. The Applicants response "shows...locations of the facilities...that will remain after final reclamation." Drawings 5-35 and 5-37 depict no surface facilities after the Mine is reclaimed. All surface facilities relative to coal recovery and loading will be removed, with the exception of the solar powered water well.

Kane County Road #136 (K3900) and the Robinson Creek Road (K3993) will be reconstructed as part of the post-mining land use.

Drawing 5-22C shows plan, gradient and cross-section drawings for the 12 foot and 24 foot roads which will be retained / re-constructed to the Pugh property (K3993).

Drawing 5-22D depicts a plan, gradient and cross-section for the 24 foot road which will be retained / reconstructed to access the water well, which is also to be retained.

There is no design drawing shown for the access road to the Swapp Ranch (illustrated on Dwg. 5-35 and 5-37) because it will have the same specifications as the water well road design Dwg 5-22 D.

Drawing 5-22E shows plan, gradient and cross section for 6,041 feet of County Road #136 reclamation.

Drawing 5-22F shows plan, gradient and cross section for 3,234 feet of County Road #136 reclamation.

See Findings written under Reclamation/Road Systems and Other Transportation Facilities for deficiencies with the road reclamation plan.

Final Surface Configuration Maps

R645-301-542.300 Final Surface Configuration Maps are specific to underground mining.

Reclamation Surface And Subsurface Manmade Features Maps

Drawing 5-8D Electrical Map shows the underground lines/conduits which will be run to provide electricity from the two diesel generators to the various surface structures and coal loading facilities. These conduits, in addition to the sub-surface sewage system and shop grease pit will be reclaimed as part of the reclamation, as they do not support the post-mining land use.

All items will be included as part of the reclamation bond.

Reclamation Treatments Maps

Certification Requirements

All drawings reviewed as part of the Chapter 5, Engineering requirements section of the R645 Coal Mining Rules are certified by registered professional engineers in the State of Utah.

Findings:

See Findings written under Reclamation/Road Systems and Other Transportation Facilities for deficiencies with the road reclamation plan.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

General

Determination of Bond Amount

As of the date of this document, (March 9, 2009) the Division has not been able to determine a reclamation bond amount for the Coal Hollow project. **Information is being extracted from the PAP in order to do this.**

Alton Coal Development, LLC anticipates disturbing 435 acres (See Drawing 5-2, Disturbance Sequence) to develop this mine, recover the coal, and reclaim the permit area.

From this, and using an estimate of $ 5,500 per acre of disturbance, a bond amount of $2,392,500 can be determined.

Form of Bond

To date, Alton Coal Development, LLC, has not posted a reclamation bond with the Division.

Terms and Conditions for Liability Insurance

The Applicant met the requirements of this section, although the liability insurance form found in Appendix 1-4 expired on 5/19/2009. Alternatively, self-insurance may be pursued, as per R645-301-117.100. The Applicant needs to provide either a certificate of liability insurance or evidence of self-insurance in compliance with R645-301-800.

Findings:

The information provided in the permit application is considered adequate to meet the requirement of this section at this point in the permitting process. The Division will determine the bond amount after receipt of requested information describing the operation and reclamation plan. In addition, prior to approval, the application must provide the following, in accordance with:

R645-301-830.140, Detailed Cost Estimates, The Division needs the Stage 1, 2 and 3 costs broken out such that incremental bonds may be implemented for the coal mining area in accordance with the requirements of **R645-301-820.111, 820.112 through 820.133,** and in agreement with Alton Coal Development. Alton Coal Development must provide a detailed estimate cost estimate, with supporting calculations for the following Coal Hollow areas:

1) Demolition of the Facilities and Structures / Loadout as shown on Drawing 5-4.

2) Reclamation costs for ponds 2 and 3, including backfilling and grading, re-soiling and re-vegetating.

3) Reconstruction of Robinson Creek

4) Total Reclamation Costs for Stage 1, to include backfilling and grading, topsoiling and re-vegetation of the 69 acres associated with the mining area.

5) Total Reclamation Costs for Stage 2, to include backfilling and grading, topsoiling and re-vegetation of the 68 acres.

6) Total Reclamation Costs for Stage 3, to include backfilling and grading, topsoiling and re-vegetation of the 99 acres.

7) These total costs must include reclamation costs for the final (or Stage 3 remaining pit) pit area depicted on Drawing 5-19.

8) Total Reclamation Costs for the Stage 1 excess spoil reclamation.[PH]